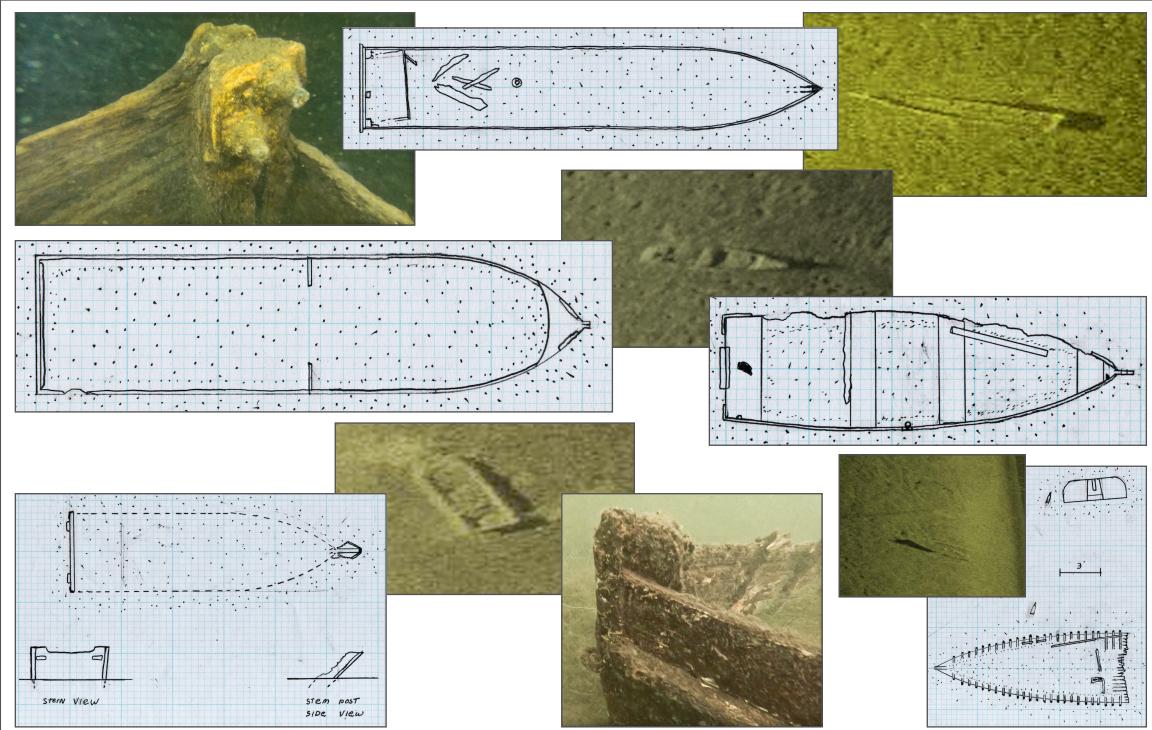


MARITIME HERITAGE MINNESOTA



Ann Merriman
Christopher Olson

Minnesota Suburban Lakes Nautical Archaeology 3 Project Report: Prior Lake



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Acknowledgments

Maritime Heritage Minnesota (MHM) thanks the People of Minnesota for their support of the Minnesota Historical and Cultural Heritage Grant program of the Arts and Cultural Heritage Fund of the Clean Water, Land and Legacy Amendment; without the MHCH Grant that MHM received to conduct this project, the work would not have been undertaken. MHM would also like to acknowledge the Grants Office of the Minnesota Historical Society for their expertise. We thank Bruce Koenen and Amanda Gronhovd of the Office of the State Archaeologist for their efforts. MHM could not have completed this project without the in-kind support of volunteer divers Josh Knutson, Kelly Nehowig, Mark Slick, and Ed Nelson; MHM thanks these talented and ethical men for their time and skill. We also thank our volunteer Betty Lloyd for her constant support. Lastly, MHM thanks our Board of Trustees Mike Kramer, Deb Handschin, and Steve Hack for their continued support of MHM's Mission.

Underwater Archaeologist
Christopher Olson



Underwater Archaeologist
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Volunteer Diver
Kelly Nehowig



Volunteer Diver
Mark Slick



Volunteer Diver
Ed Nelson



Volunteer Diver
Josh Knutson



Trustee
Steve Hack



Chair
Mike Kramer



Mascots & Computing Cats
Weebles Cat & Rodney Cat



Volunteer
Betty Lloyd



Volunteer Dive Crew
Ann Nehowig



Trustee
Deb Handschin



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MHM IS A 501.(c).3 NON-PROFIT CORPORATION DEDICATED TO THE DOCUMENTATION, CONSERVATION, AND PRESERVATION OF MINNESOTA'S FINITE MARITIME CULTURAL RESOURCES

"ACHF grants have allowed a small St. Paul-based nonprofit, Maritime Heritage Minnesota (MHM), to re-establish the discipline of underwater archaeology in Minnesota. Without this support, MHM could not have conducted its groundbreaking nautical archeological and maritime historical research."

~Steve Elliott, Former Minnesota Historical Society CEO and Director, January 2015

Introduction

Wrecks and the artifacts associated with them tell a story. Removing or otherwise disturbing artifacts, treating them as commodities that can be sold, obliterates that story. Nautical archaeological and maritime sites are finite, and are significant submerged cultural resources. Nautical, maritime, underwater, maritime terrestrial – Maritime Heritage Minnesota's (MHM) deals with all of these types of sites throughout the State of Minnesota. MHM's Mission is to document, conserve, preserve, and when necessary, excavate these finite cultural resources where the welfare of the artifact is paramount. MHM is concerned with protecting our underwater and maritime sites – our shared Maritime History – for their own benefit in order for all Minnesotans to gain the knowledge that can be obtained through their study. MHM's study of wrecks does not include the removal of artifacts or damaging the sites in any way. MHM does not raise wrecks or 'hunt' for 'treasure'. Submerged archaeological sites in Minnesota are subject to the same State statutes as terrestrial sites: the Minnesota Field Archaeology Act (1963), Minnesota Historic Sites Act (1965), the Minnesota Historic District Act (1971), and the Minnesota Private Cemeteries Act (1976) if human remains are associated with a submerged site. Further, the case of *State v. Bollenbach* (1954) and the Federal Abandoned Shipwrecks Act of 1987 provide additional jurisdictional considerations when determining State oversight and "ownership" of resources defined by law as archaeological sites (Marken, Ollendorf, Nunnally, and Anfinson 1997, 3-4). Therefore, just like terrestrial archaeologists working for the State or with contract firms, underwater archaeologists are required to have the necessary education, appropriate credentials, and hold valid licenses from the Office of the State Archaeologist (OSA).



**Respect the Diver Down Flag
By Law, Stay 150-Feet Away From
All Diver Down Flags Displayed**



Preface

In 2016, during the Minnesota Suburban Lakes Survey Project (MSLS), MHM surveyed Upper and Lower Prior Lake (1,238 acres, Scott County), Lake Pulaski (702 acres, Wright County), Medicine Lake (886 acres, Hennepin County), Lake Johanna (213 acres, Ramsey County), Lake Sylvia (1,524 acres, Wright County), and Lake Elmo (206 acres, Washington County). Other MHM sonar survey and underwater archaeology projects have taken place in 'smaller' suburban lakes White Bear Lake and Lake Waconia, as well as Lake Minnetonka, the Headwaters Mississippi River, and the Minnesota River. In 2017 and 2018, during the Minnesota Suburban Lakes Nautical Archaeology 1 and 2 Projects (MSLNA-1, MSLNA-2), MHM identified the only 3 recognized wrecks on the bottom of Prior Lake: the Wooden Outboard Wreck (21-SC-108), the Fiberglass Hydroplane Wreck (21-SC-109), and the Glasspar G-3 Skiboat Wreck (Anomaly 18). MHM's targeted re-scanning of Prior Lake using improved down and side-imaging sonar produced significantly more detailed data. Within this data, MHM recognized a 4th wreck (Anomaly 57) and 4 possible wrecks (Anomalies 58, 59, 63, 64). It was determined that investigation of these anomalies using SCUBA to determine their nature and rudimentarily document them was warranted.

Results of the Minnesota Suburban Lakes Nautical Archaeology 3 Project

Research Design

The purposes of the MSLNA-3 Project was to conduct a targeted remote sensing sonar survey and use underwater archaeological reconnaissance to answer questions about and determine the nature of specific anomalies. The lakes focused on during the project were Prior Lake, Medicine Lake, and Lake Johanna.

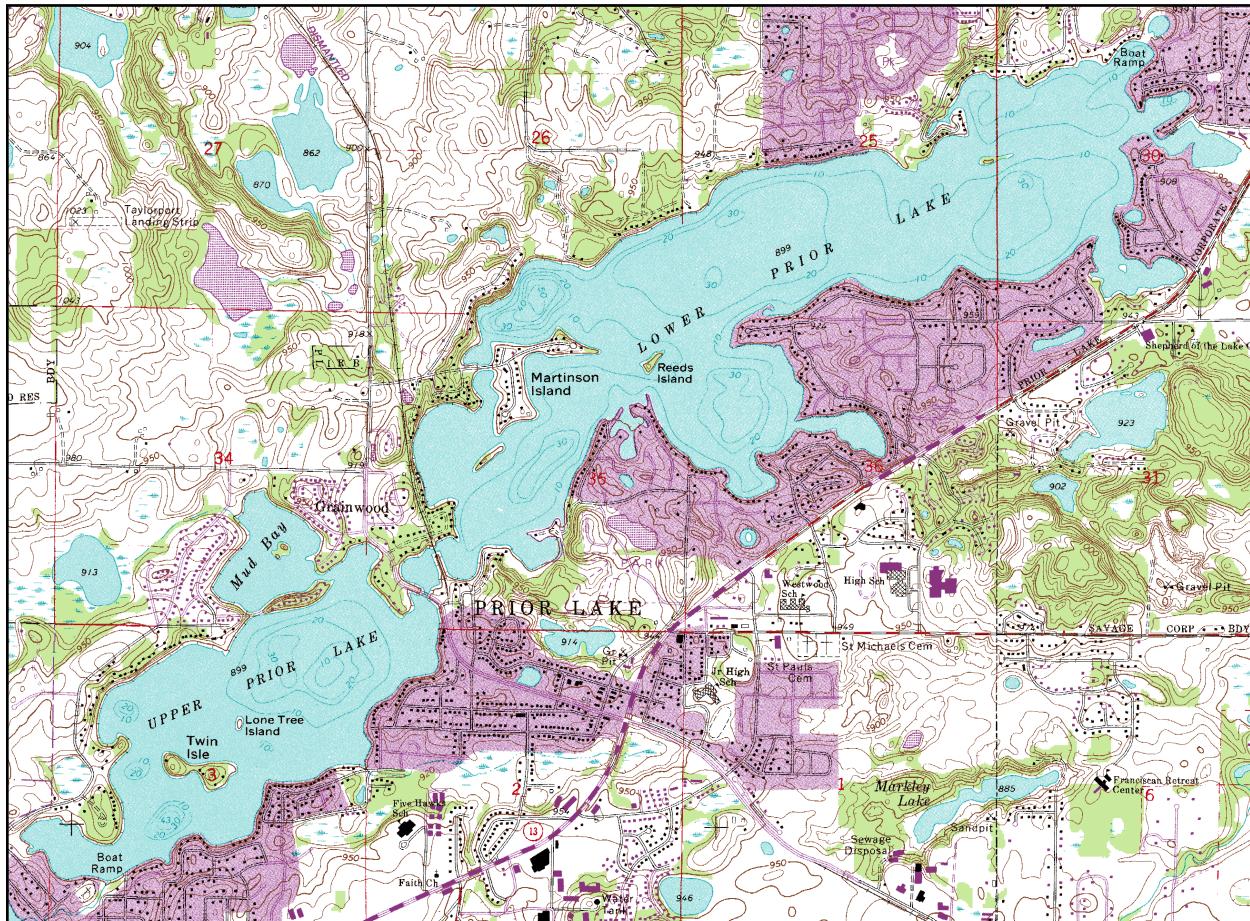
Methodology

The use of improved sonar equipment to record images with increased detail and clarity directly affects underwater archaeological reconnaissance by facilitating efficient dive planning. Specifically, it eliminates the need to dive on dozens of false targets - unusual bottom contours, rocks, and trees - that often appear to be wrecks and other objects. Further, MHM can identify maritime sites such as docks, boat lifts, dock canopies, and steam boilers to determine if dive reconnaissance on those objects is necessary, depending on their location and other factors. For the MSLNA-3 Project, specific anomalies that were probable wrecks and other submerged cultural resources were chosen for investigation using SCUBA. Also, using data accumulated from the fieldwork as a starting point, MHM conducted research to place newly recognized nautical archaeological sites and anomalies into their historical contexts. Minnesota Archaeological Site Forms were filed with the OSA when appropriate.

Results: Prior Lake

After the completion of the MSLNA-3 Project fieldwork in Prior Lake in October 2019, there are now 8 identified wrecks, 14 maritime sites, and 4 'other' sites or objects on the lake bottom. Some other anomalies may have not been dove upon yet, but their sonar

signatures are detailed enough to allow for their identification; they may be investigated using SCUBA in the future. The anomalies were identified through underwater archaeological reconnaissance fieldwork using SCUBA, digital video, measured drawings, side and down-imaging sonar, and maritime historical research. Of the 8 identified wrecks in Prior Lake, 7 of them now have Minnesota Archaeological Site numbers. During the MSLNA-3 Project specifically, MHM and its volunteers identified 5 new wrecks (A57, A59, A66, A67, A74), 3 new submerged maritime sites (A30, A8.2, A72), 2 ‘other’ objects (A25, A60), a tree (A68), and 1 anomaly requires re-evaluation (A41). Also during the MSLNA-3 Project, MHM’s targeted side and down imaging sonar re-scanning of Prior Lake using updated sonar equipment allowed for the identification of 13 anomalies as false targets comprised of bottom contours or vegetation (A23, A33, A37, A39, A40, A45), rocks (A11, A34, A35, A38, A58, A70) and a tree (A65) - without dive reconnaissance.



Upper and Lower Prior Lake (USGS)

Wooden Flat Bottomed Row Boat Wreck, 21-SC-116 (Anomaly 57)

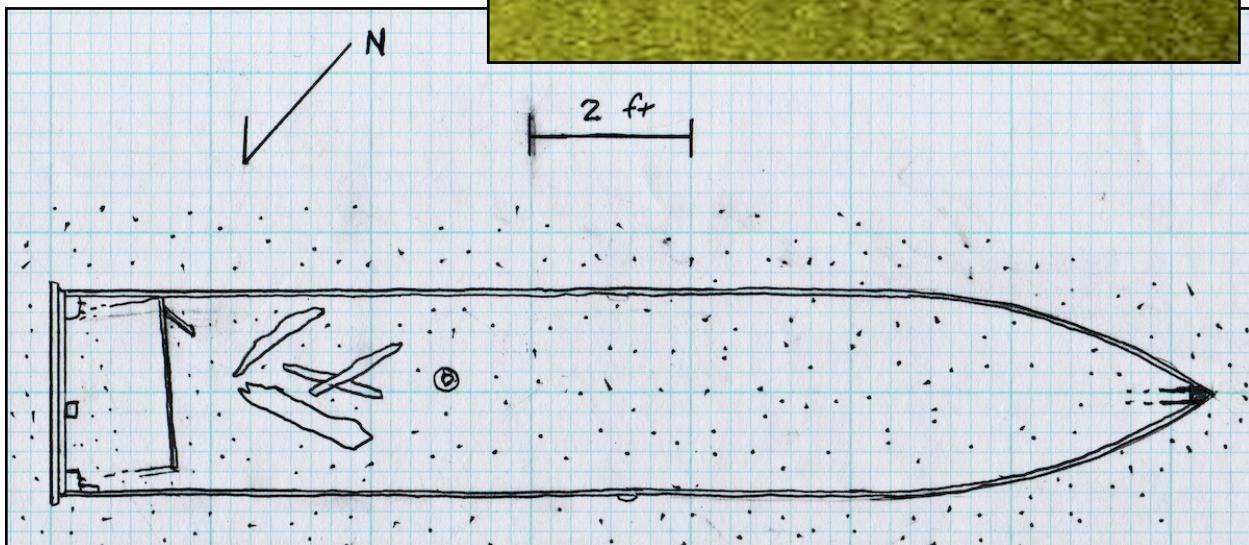
MHM recorded a sonar image of Anomaly 57 during the 2016 and 2018 surveys; the 2018 image of the anomaly clearly shows it is a small wreck. As part of the MSLNA-3 Project, Anomaly 57 was investigated using SCUBA; the Wooden Flat Bottomed Wreck is 14.50 feet long, 2.80 feet in the beam; and the depth of hold is 1.00 foot. Constructed

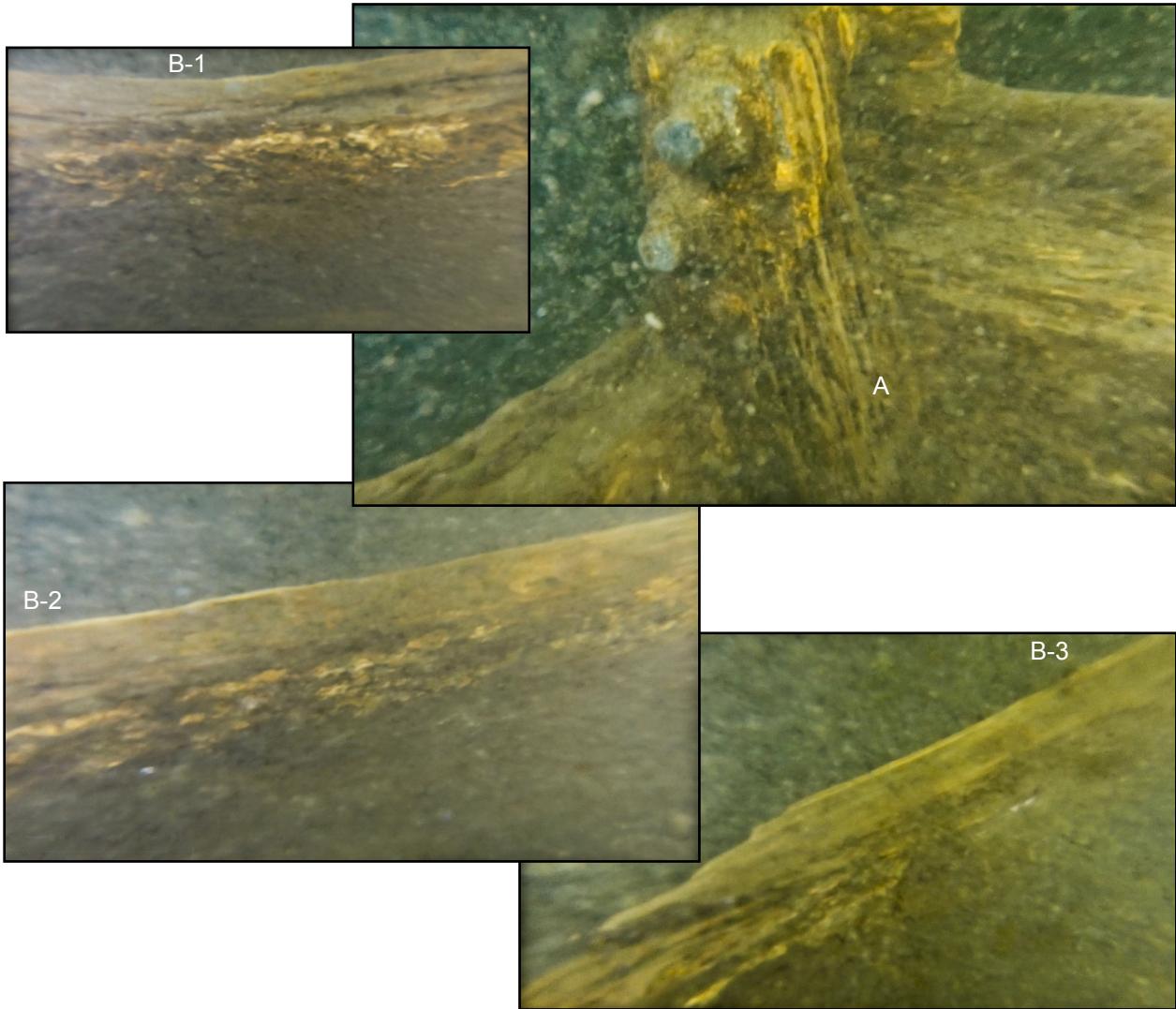
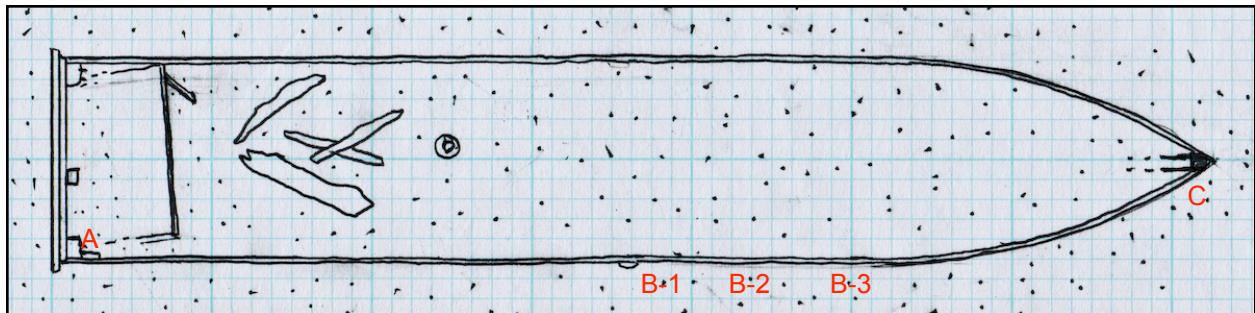
of wood, the wreck has a pointed bow with a stempost, square transom, hard chine, and is longitudinally planked. The port and starboard gunwales with a caprail survive forward; moving aft, the caprail has deteriorated. A rubrail survives along the vessel's sides, with some surviving white paint. The stern is intact but worn, with the upper gunwale stake offset and attached to the transom on its outer surface, in essence creating a rudimentary rubrail. Two metal through-hull fittings at gunwale-level on the inner transom probably supported the dislodged bench; the port side fitting is missing but the large through-hull bolt that held it in place is extant. The port and starboard quarters survive with upright frames at each corner that are secured with thick metal bolts with roves; these frames are rough-hewn tree branches as opposed to cut and trimmed beams. Further, bottom hull strakes are visible and a bench seat at the stern is present but it has dislodged. No frames can be discerned, but the sonar image suggests frames survive near the silt line. While no oarlocks survive, Anomaly 57 likely had them during her lifetime and a metal strap is loosely associated with the starboard side amidships; its function is unknown. Inside the hull, a jumble of beams and planks are found, along with a stanchion that may be the remnants of a mast, although that is unlikely. Due to her low freeboard, MHM suggests she was used primarily in still waters, whether for duck hunting or fishing. She is well-built, with particular attention paid to her sturdy stempost and both stern corners. In consideration of a construction date for the Wooden Flat Bottomed Row Boat Wreck, MHM contends the vessel was constructed in the 1890s. Small wooden boats on Prior Lake and other vacation destination lakes with resorts on their shores were easily accessible by rail from the Twin Cities, and large numbers of watercraft were needed for the tourist trade. Taking into account the wreck's condition, MHM contends Anomaly 57 sank around 1910. MHM acquired her Minnesota Archaeological Site Number, 21-SC-116 in January 2020.

Sonar image of 21-SC-116 (MHM)



Sketch of the Wooden Flat Bottomed Row Boat Wreck (Christopher Olson)

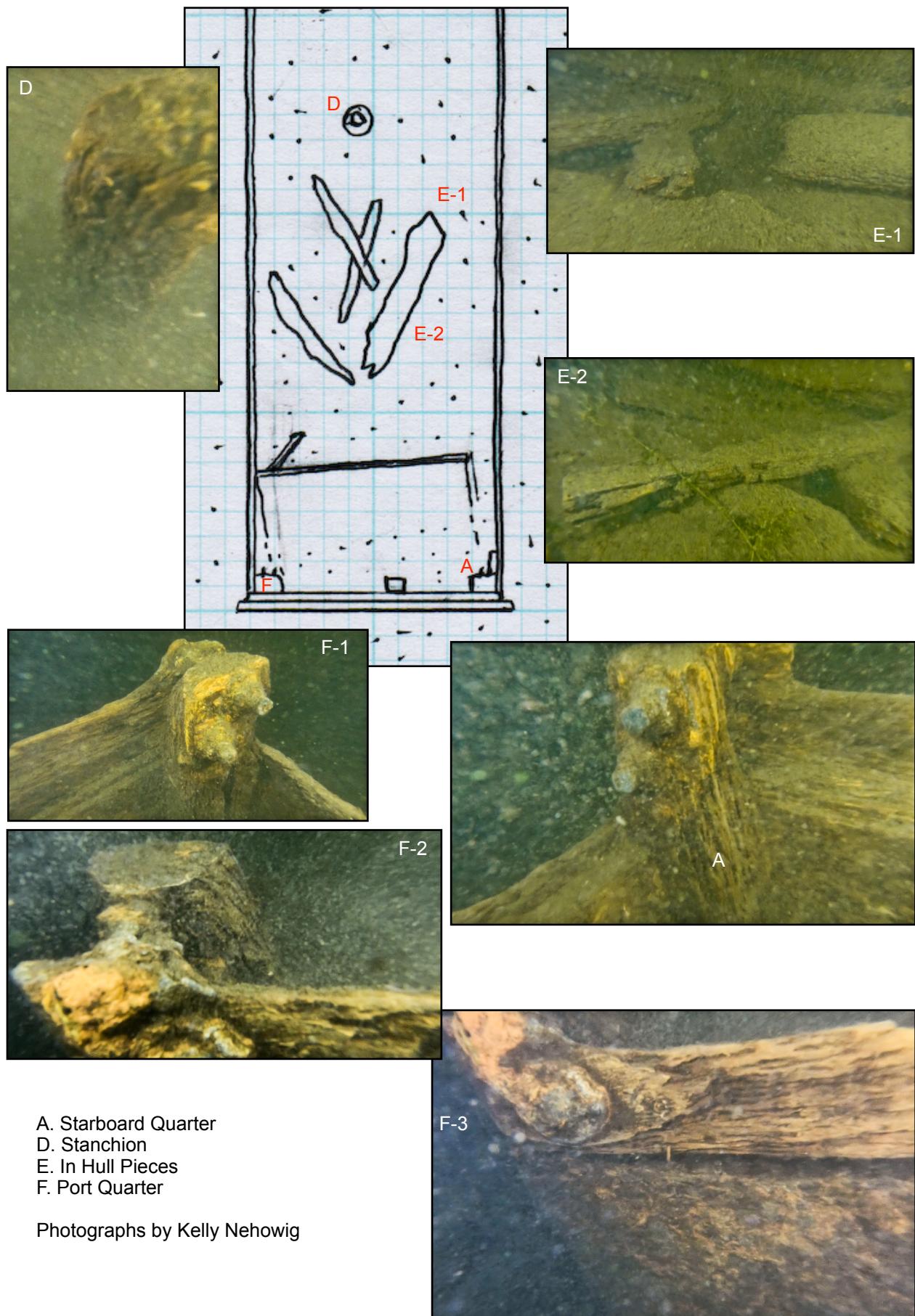




A. Starboard Quarter
B. Starboard Gunwale
C. Starboard Bow

Photographs by Kelly Nehowig





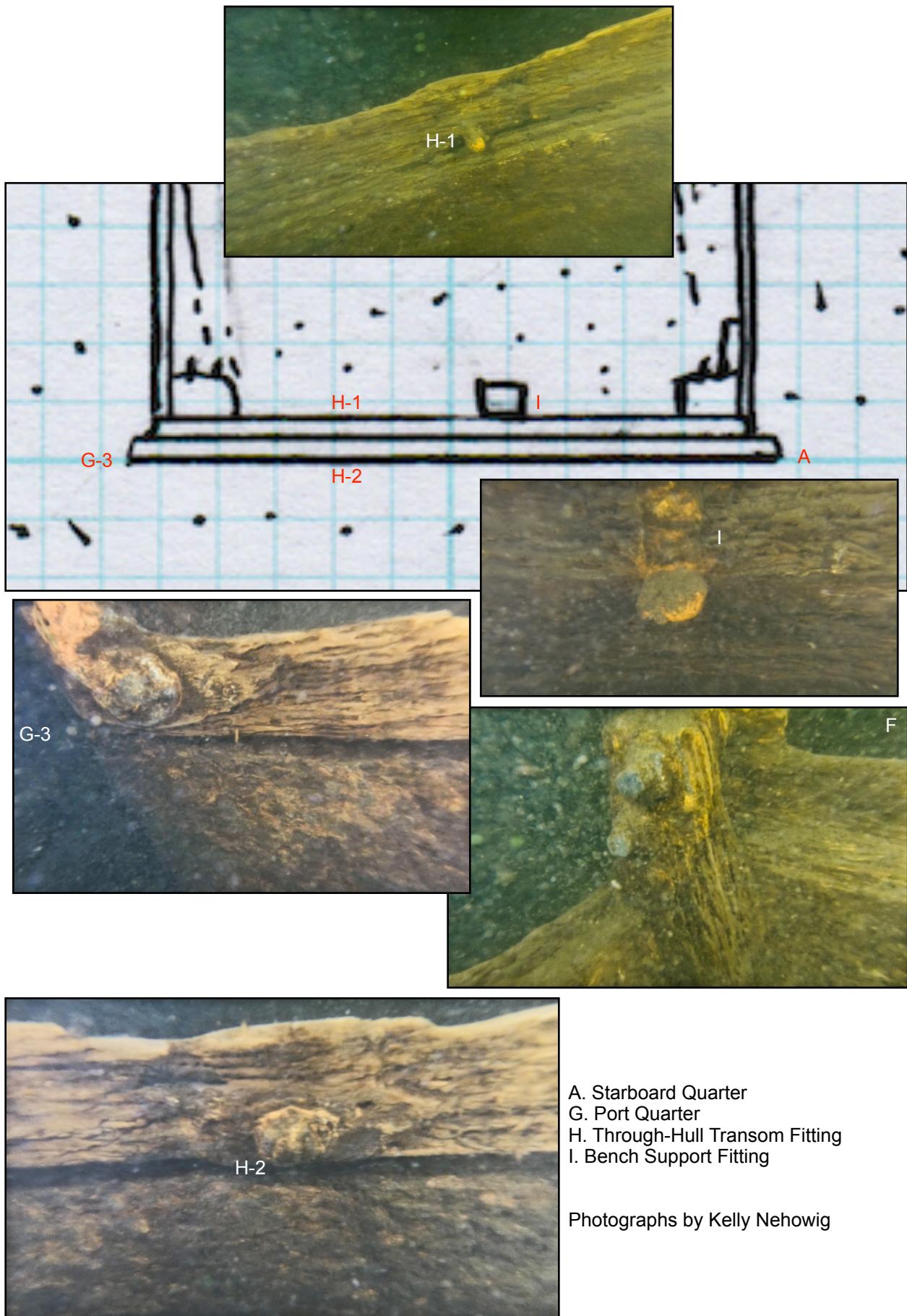
A. Starboard Quarter

D. Stanchion

E. In Hull Pieces

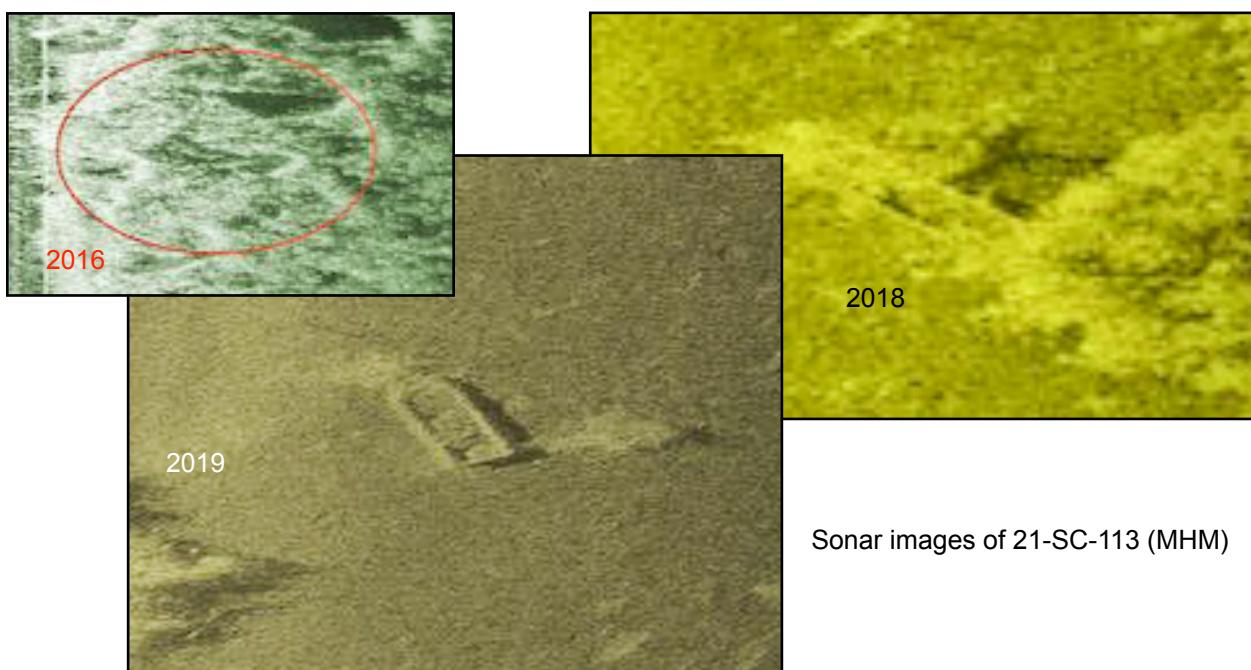
F. Port Quarter

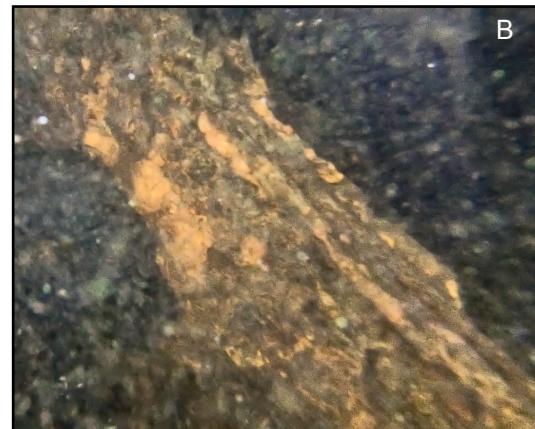
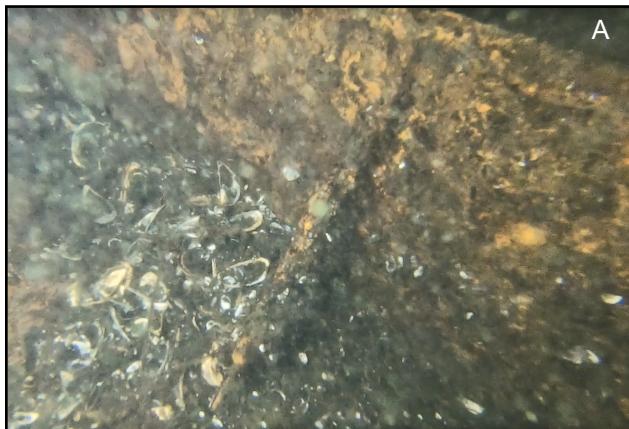
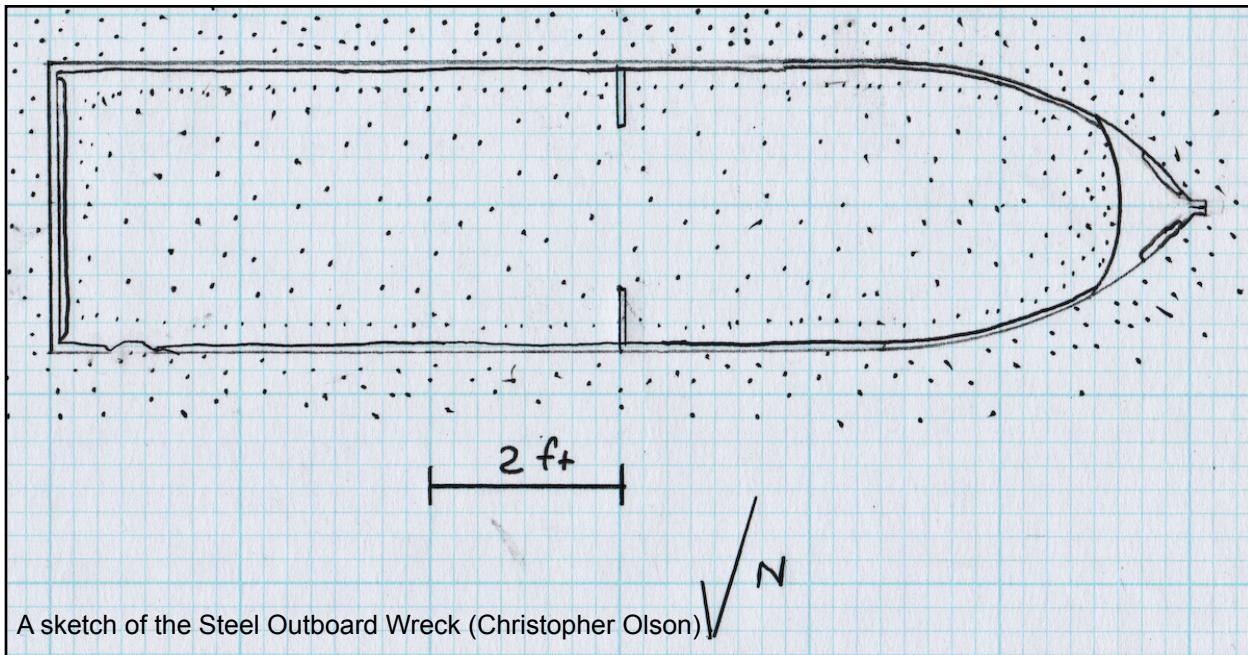
Photographs by Kelly Nehowig



Steel Outboard Wreck, 21-SC-113 (Anomaly 59)

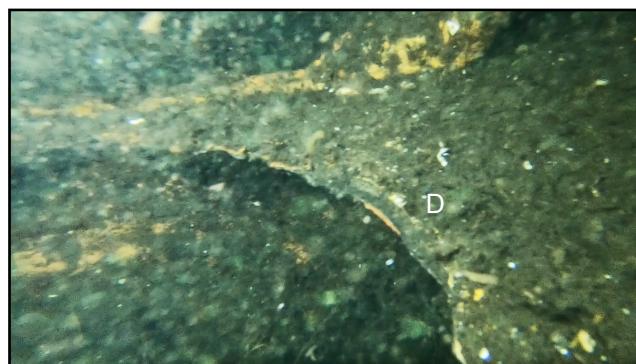
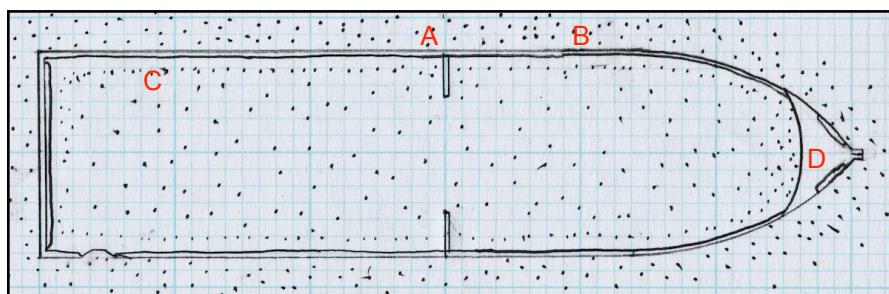
Anomaly 59 was recorded in sonar footage from 2016, but she was unrecognizable due to profuse weeds. In 2018, she was again recorded by the sonar unit and was more recognizable; MHM decided the anomaly warranted further attention. Therefore, in 2019, MHM again attempted to record distinct sonar images of Anomaly 59, this time with success due to a lack of vegetation immediately around the wreck. The latest targeted sonar survey produced clear and detailed images of the wreck. Anomaly 59 is 12.00 feet long, 3.00 feet in the beam, and she has a 1.00-foot depth of hold at the stern. Fabricated from steel, the wreck has a pointed bow, square transom, hard chine, and a flat bottom. The gunwale is intact on the starboard side and mostly intact on the port side aft, finished with a caprail. On the port side forward, the gunwale is uneven due to the missing caprail. Stringers run longitudinally along both sides of the inner hull, providing rigidity; they are possible supports for missing wooden benches. At the bow, a metal plate extends from a small deck - or a bow casting - with a rounded aft edge; MHM contends it is a bracket for holding an anchor. On amidships port and starboard, solid knees are attached to the bottom and inner hull provided strength and rigidity to the vessel. The transom is lined with a sturdy wood plank that would have served as a motor board. MHM contends Anomaly 74 was constructed using rivets, although the corroded nature of the wreck makes proving that assertion impossible at this time. Further, MHM cannot determine if a company constructed the Steel Outboard Wreck or if she was a home-build, although her somewhat crude fabrication suggests she was produced by a non-professional. In consideration of a construction date for the wreck, MHM contends the vessel was fabricated around 1910; riveting was a common construction technique beginning in the mid-19th Century. Anomaly 59's working life would be longer than a wooden boat, at least pertaining to hull integrity due to rot. Therefore, taking the deteriorated condition of the wreck into account, MHM contends Anomaly 59 sank around 1930, a possible 20-year life on the water. MHM acquired her Minnesota Archaeological Site Number, 21-SC-116 in January 2020.





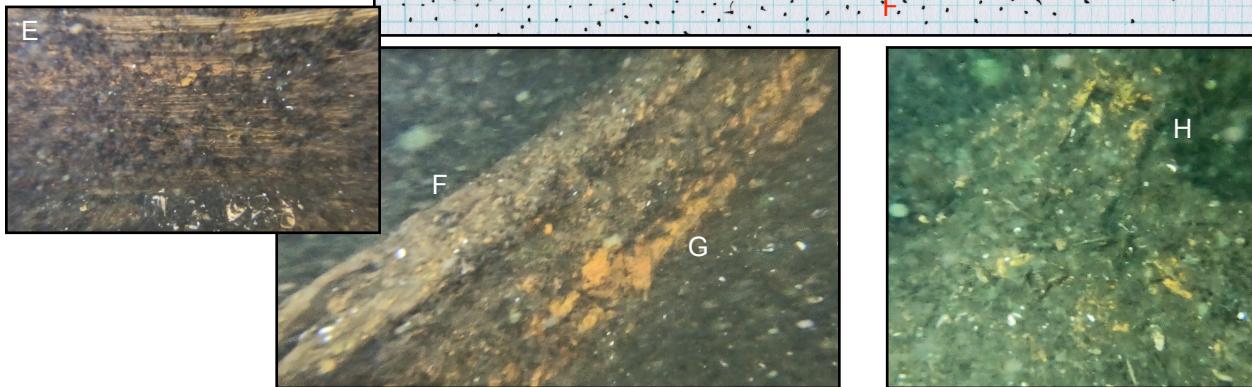
- A. Port Side Knee
- B. Missing Caprail Gunwale
- C. Port Side Stringer
- D. Bow Casting

Photographs by Kelly Nehowig



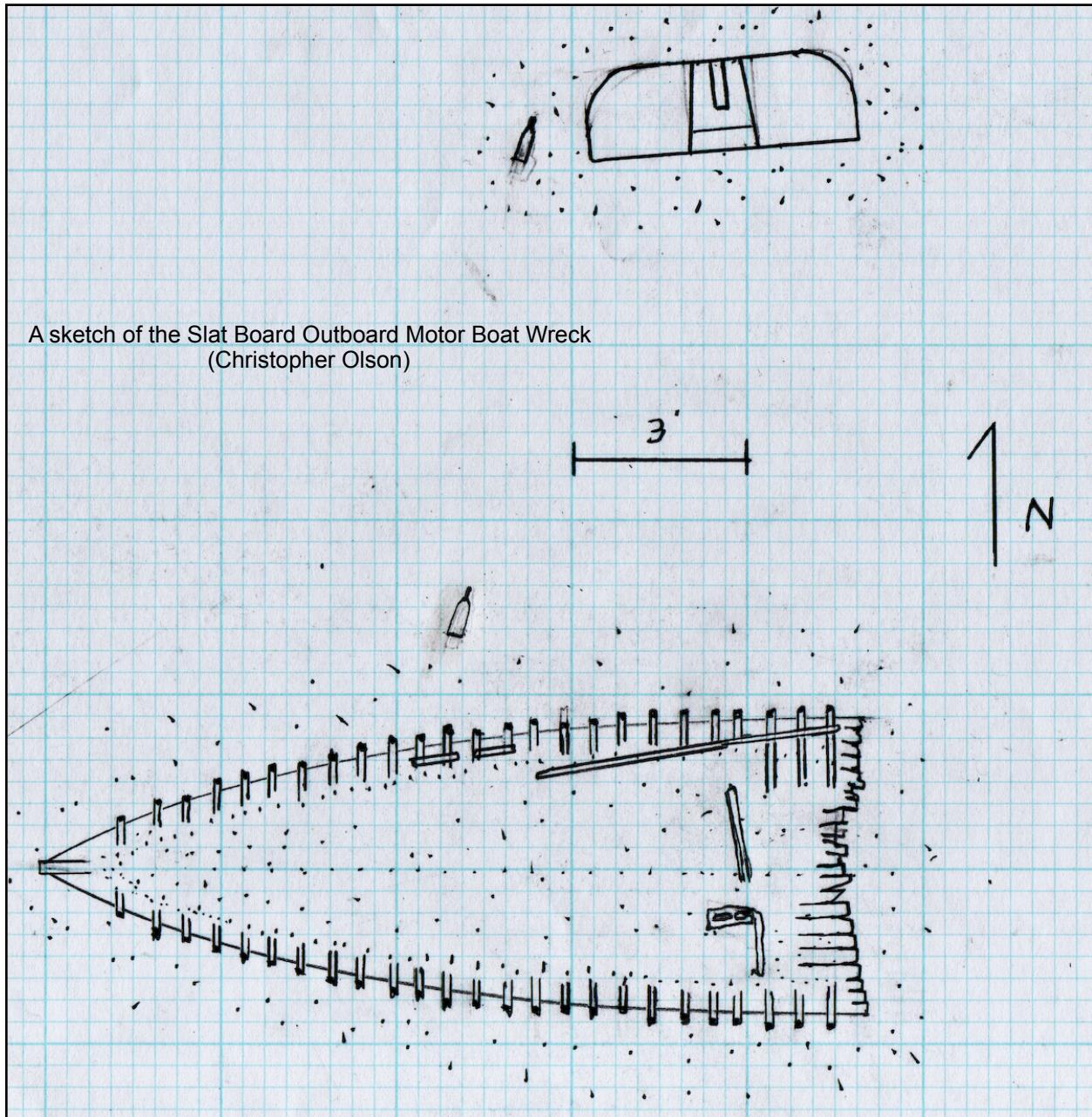
- E. Wooden Motor Board
- F. Starboard Caprail
- G. Starboard Stringer
- H. Anchor Plate

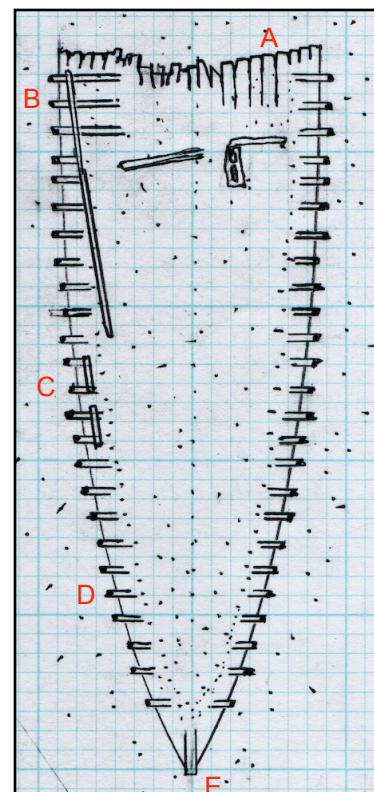
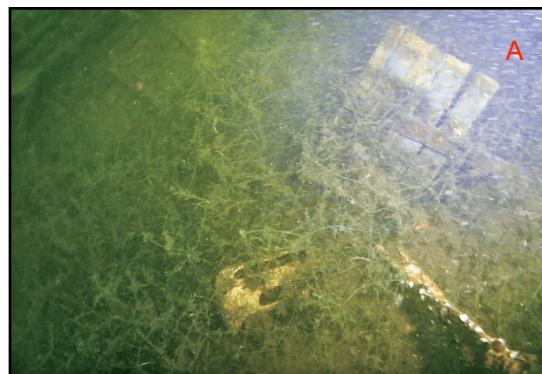
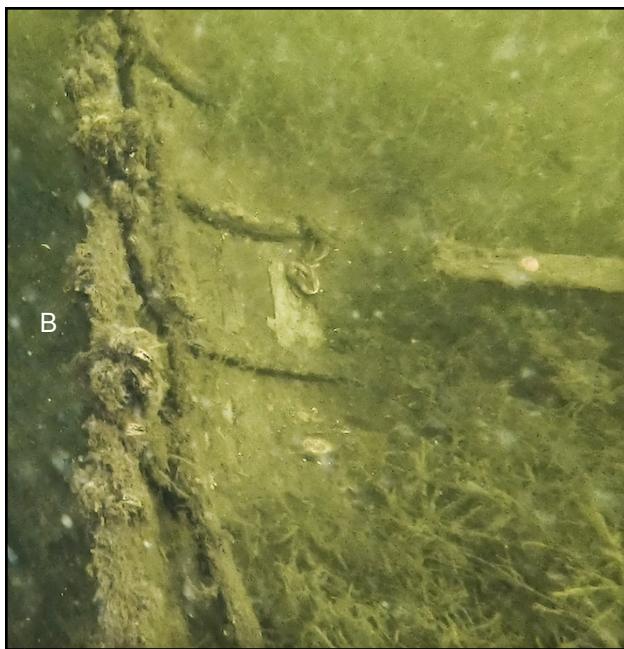
Photographs by Kelly Nehowig



Slat Wood Outboard Motor Boat Wreck, 21-SC-112 (Anomaly 67)

Anomaly 67 was recorded in sonar footage from 2016 but without much detail. In 2019, clear images of the Slat Wood Outboard Motor Boat Wreck were achieved during targeted sonar survey. Anomaly 67 is 13.50 feet long, 4.50 feet in the beam, has a pointed bow, and an intact stempost with a towing ring attached to it. She is carvel-built of fine, thin wooden stakes and held together with slot-headed wood screws and nails. Her gunwale is missing throughout the wreck and her square transom was dislodged from the hull and lies 11.00 feet off the starboard quarter, next to a bottle - and another bottle lies in the silt between the transom and the hull. The transom is lying with its inner face upward, with a sturdy knee attached to a trapezoidal reinforcing plank that also has a motor board attached to it at the gunwale. The rectangular motor board has 2 concentric circles pressed into it, indicators that she carried a good-sized outboard motor. The only surviving gunwale on the wreck is the top edge of the transom that angles downward to accept the motor. Thin futtocks extend above the hull's sides, visible due to the missing gunwale; they curve at the gentle turn of the bilge, becoming floors on the vessel's flat bottom. A fragmented stringer that extends the entire length of the wreck is attached to the inner starboard side of the hull; this stringer may have supported the vessel's benches that are no longer extant. A hefty splashrail runs along the outer hull on both port and starboard; on the port side it is just above the silt line. The individual outer hull stakes can be seen throughout the wreck, and they are broken off at the stern. Inside the aft portion of the hull, a metal anchor roller with a bow casting lie loose in the silt among weeds. It is arguable that this set of bow gear were once attached to Anomaly 67. The inner and outer hull was covered with white primer or paint topped by a layer of light blue paint. MHM contends the vessel was constructed around 1920 by a skilled boatwright. Anomaly 67's working life would be limited by her wooden construction, and a working life of 15 years is reasonable. Therefore, MHM contends the Slat Wood Outboard Motor Boat Wreck sank around 1935, a possible 15-year life on the water. MHM acquired her Minnesota Archaeological Site Number, 21-SC-112 in January 2020.





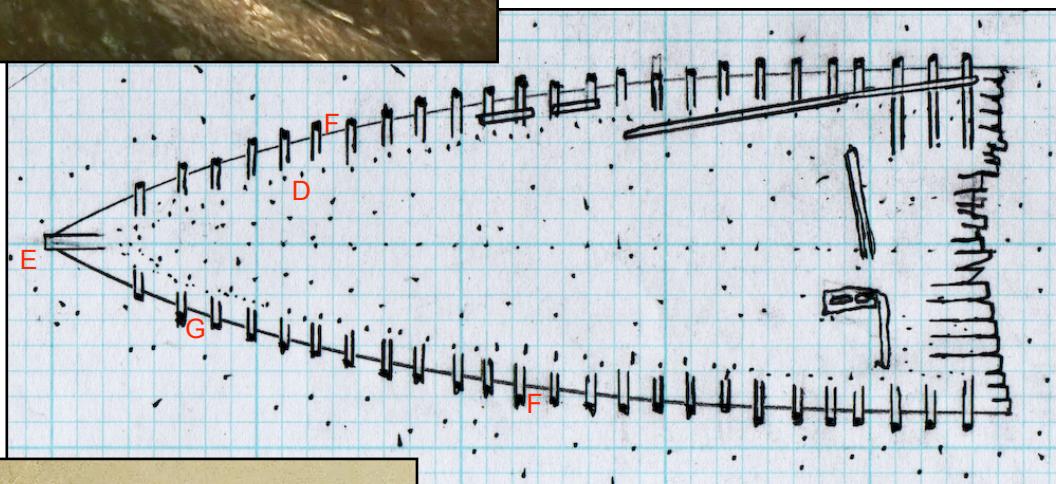
- A. Stern
- B. Starboard Quarter
- C. Starboard Amidships
- D. Starboard Forward
- E. Bow

Photographs by Kelly Nehowig and Josh Knutson



D. Starboard Forward
E. Bow
F. Splash Rail
G. Port Forward

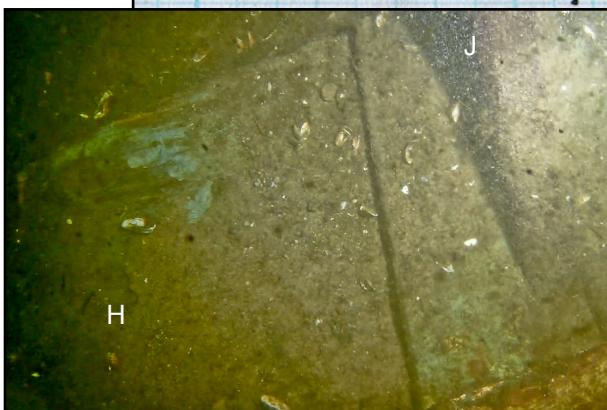
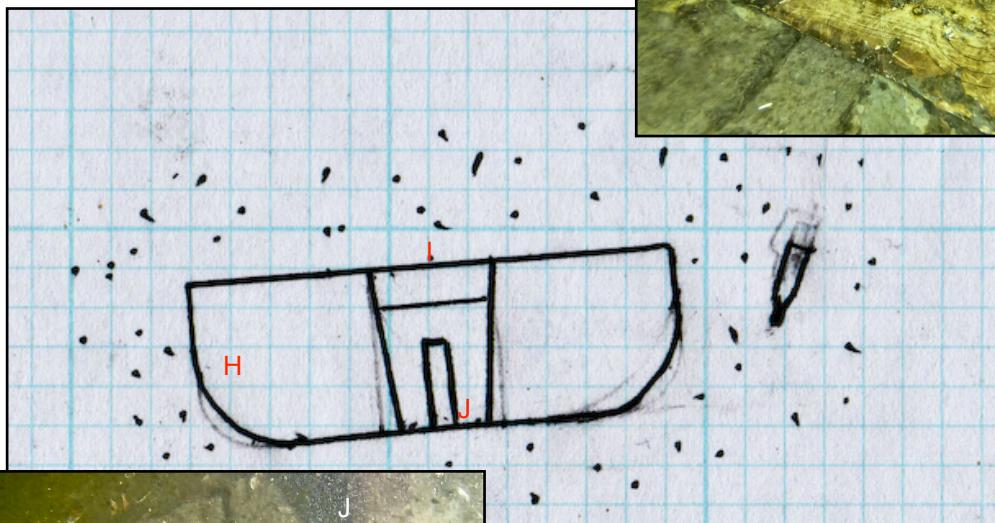
Photographs by Kelly Nehowig and Josh Knutson





H. Inner Transom
I. Motor Board
J. Stern Knee

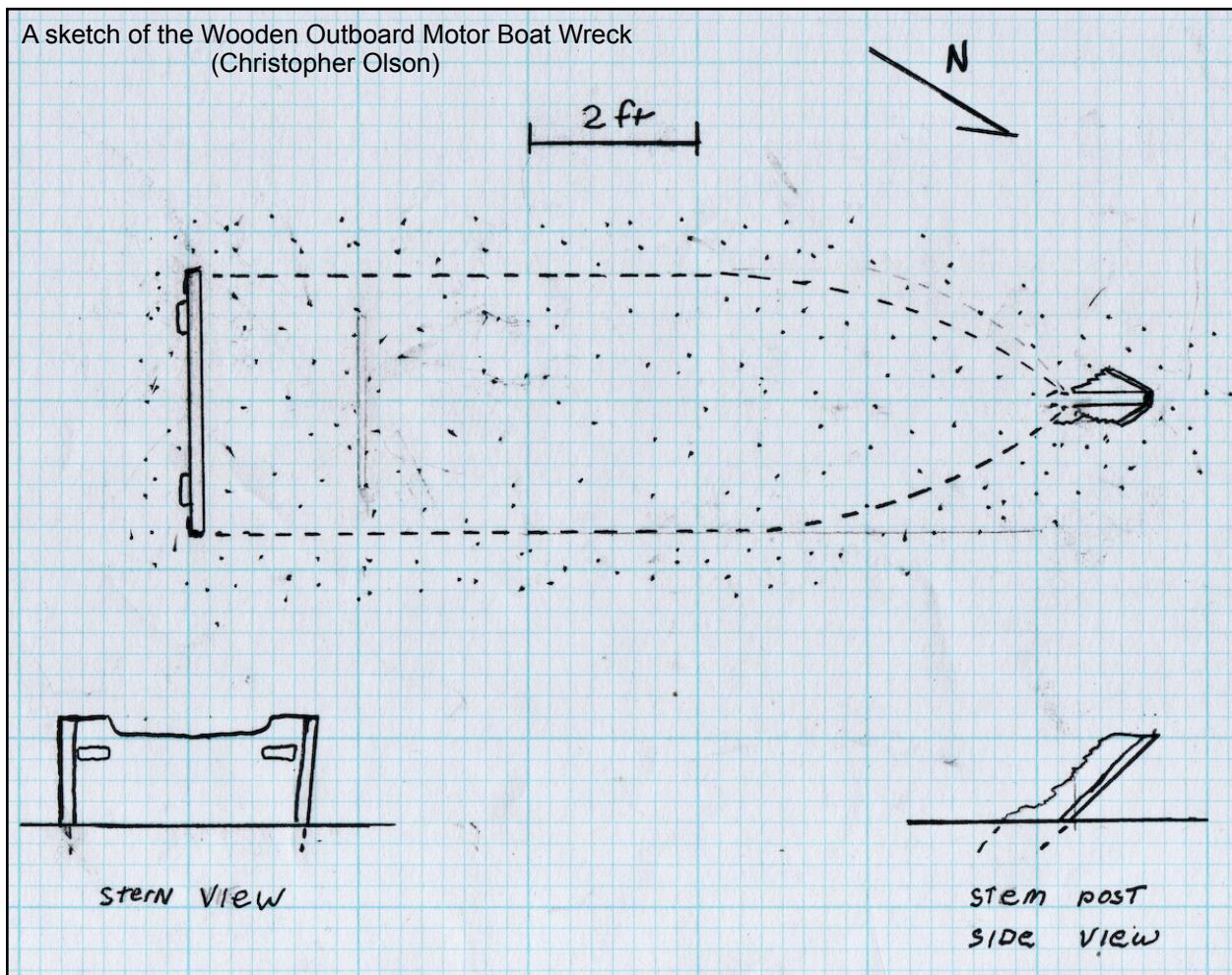
Photographs by Kelly Nehowig and Josh Knutson

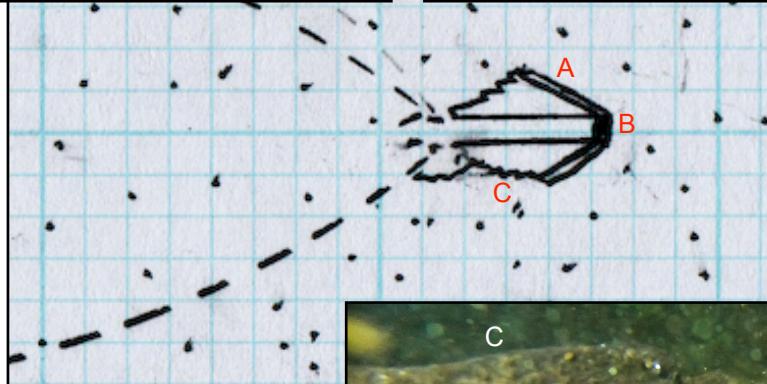
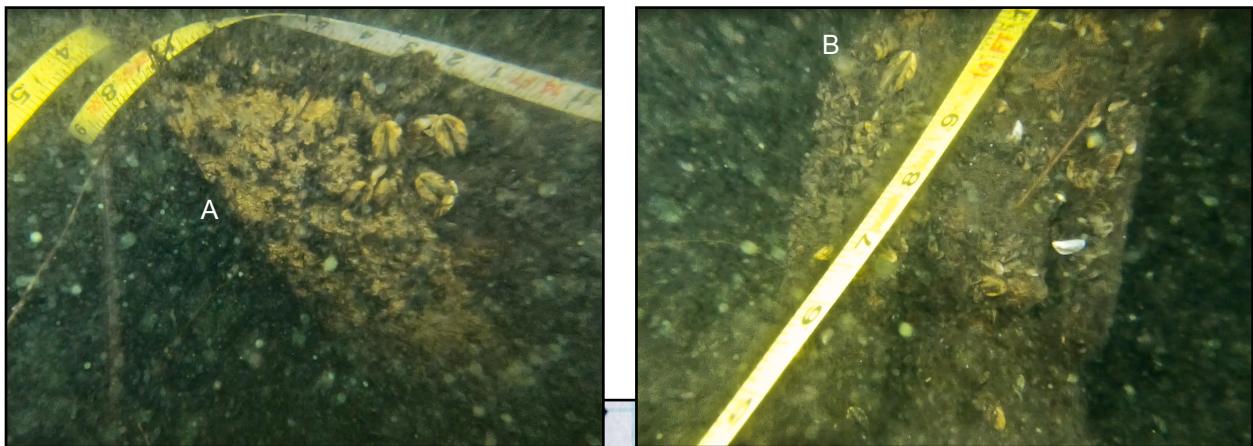
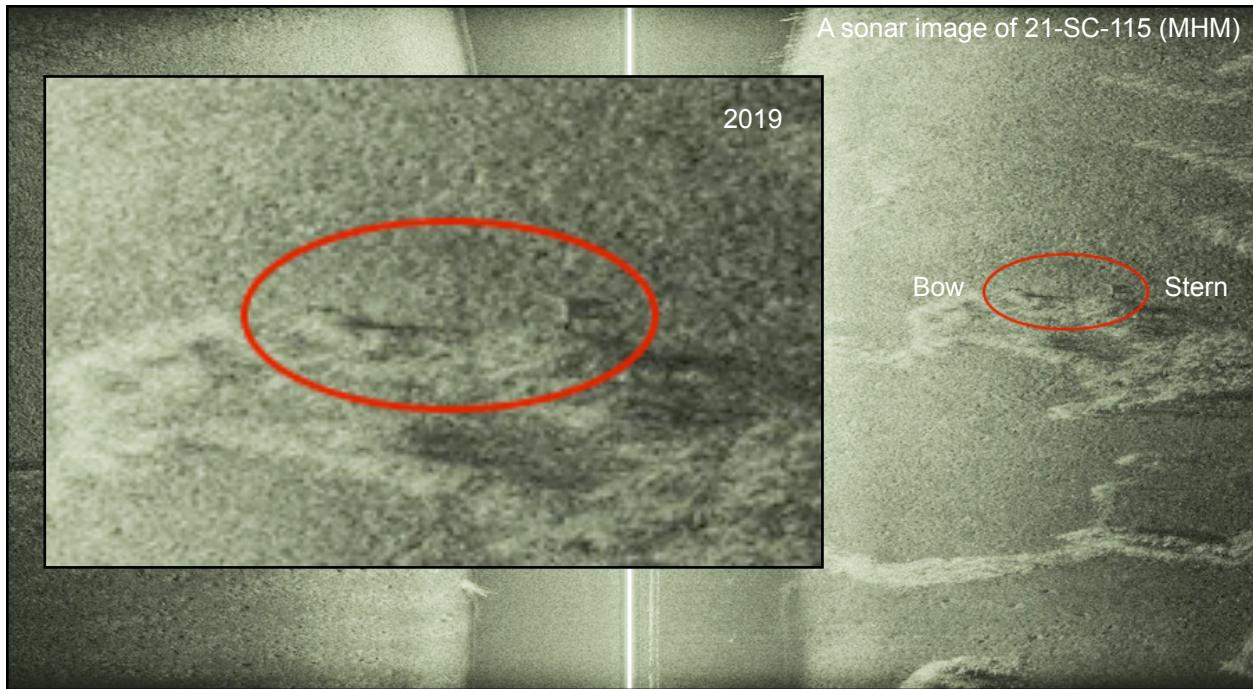


The Stern Knee is
notched to fit over the
last 3 floors.

Wooden Outboard Motor Boat Wreck, 21-SC-115 (Anomaly 66)

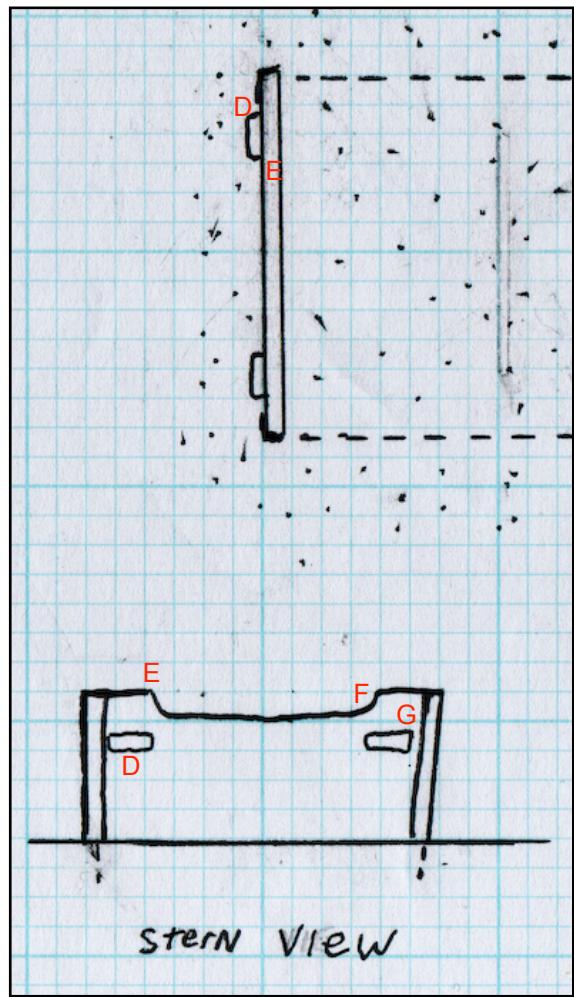
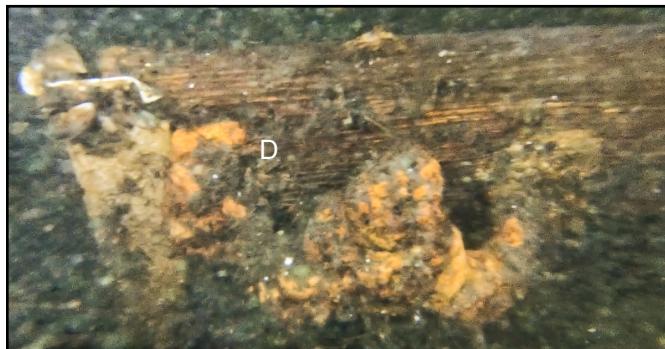
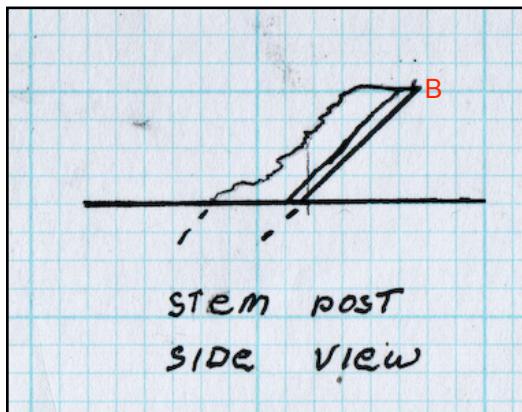
An ambiguous sonar image of Anomaly 66 was recorded during the 2016 survey, nearly unrecognizable due to profuse vegetation. In 2019, as part of the MSLNA-3 Project, a clear image of the Wooden Outboard Motor Boat Wreck were achieved during targeted sonar survey. Anomaly 66 is mostly buried in silt, but her bow and stern are exposed. The wreck is 14.00 feet long, 4.00 feet in the beam, has a pointed bow with an intact stempost, and a square stern. The vessel's sides have deteriorated, but the bottom survives to the turn of the bilge under the silt. The transom is intact and the wood is in good condition; the central section of the stern is angled downward to accept an outboard motor. Extremely corroded metal carrying handles are located on both the port and starboard transom. Thin metal strips are bent to fit both quarter corners and the starboard stern gunwale, although the gunwale strip is incomplete and loose. The metal strips were apparently applied to the hull to protect the vessel's corners and gunwale edge, but not very effectively. MHM contends the vessel was constructed around 1925; Anomaly 66's working life would be limited by her wooden construction, and a working life of 15 years is reasonable. Therefore, MHM contends the Wooden Outboard Motor Boat Wreck sank around 1940, a possible 15-year life on the water.





A. Stempost Port
B. Stempost
C. Stempost Starboard

Photographs by Kelly Nehowig and Josh Knutson



- D. Port Quarter and Handle
- E. Port Stern Gunwale
- F. Starboard Stern Gunwale
- G. Starboard Quarter, Handle, and Metal Strips

Photographs by Kelly Nehowig and Josh Knutson

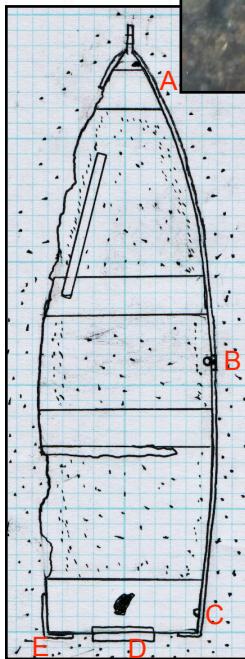
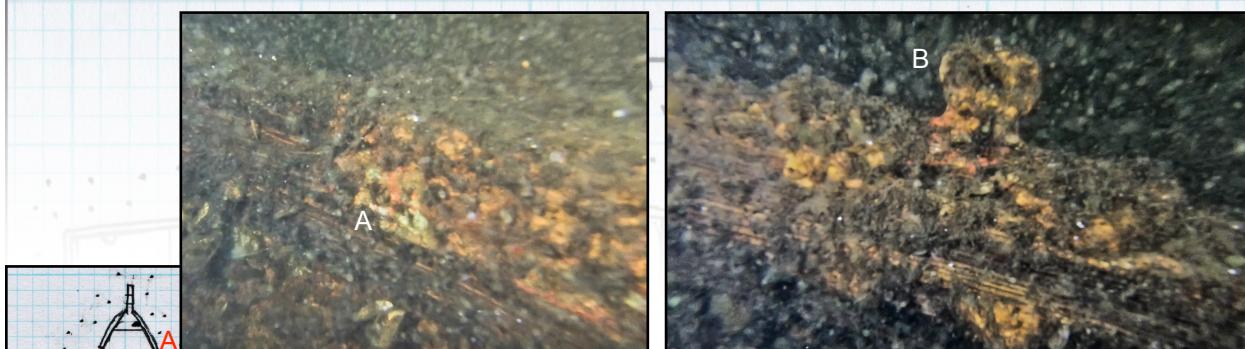
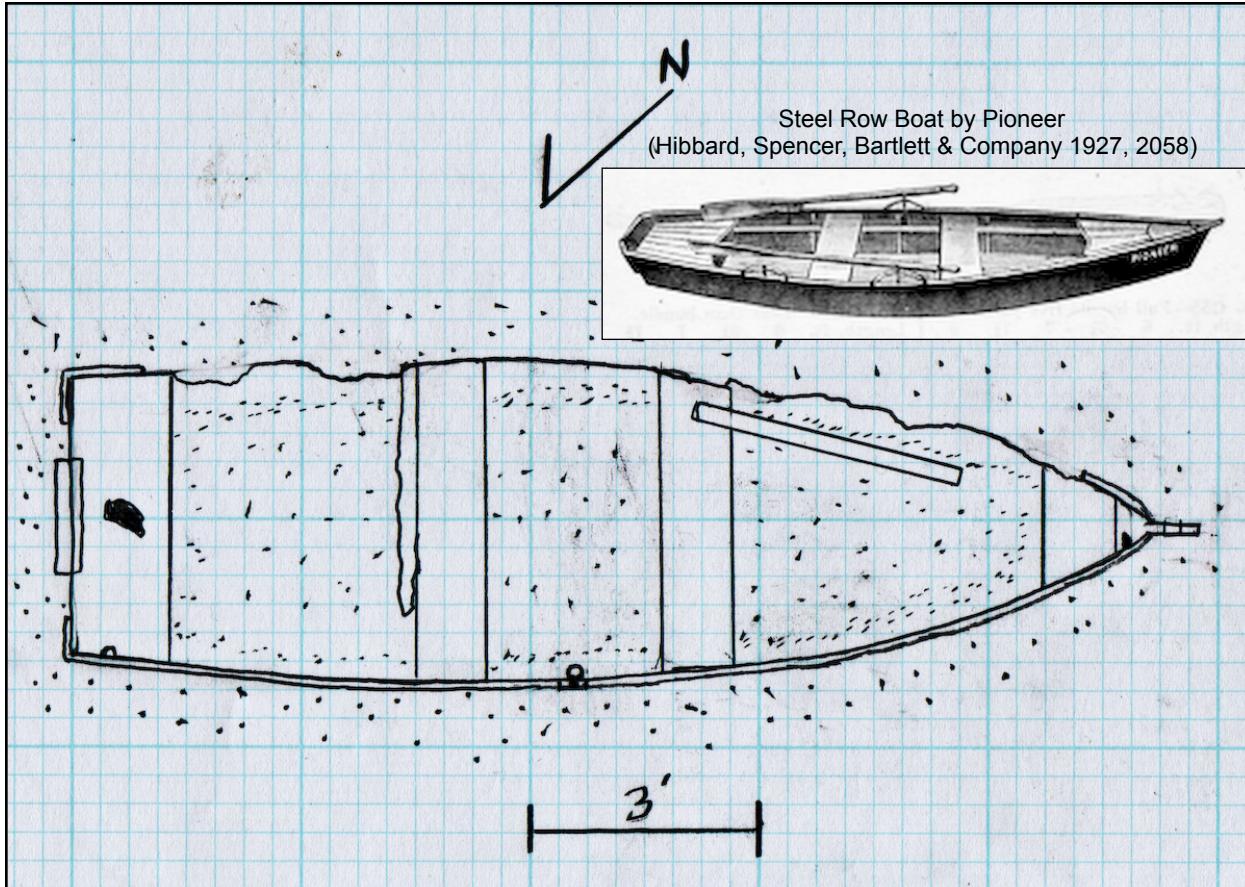
Steel Outboard Motor Boat Wreck, 21-SC-114 (Anomaly 74)

Anomaly 74 was recorded in sonar footage from 2018, but she was unrecognizable due to profuse weeds. In 2019, clear images of the Steel Outboard Motor Boat Wreck were achieved during targeted sonar survey. Anomaly 74 is 14.10 feet long, 4.10 feet in the beam, fabricated from steel sheets, has a sharply pointed bow, square transom, hard chine, and a flat bottom. An anchor roller - probably for a mushroom anchor - is attached to the bow with a bent metal strap that is secured to the wooden gunwale by slot-headed screws. A small trapezoidal bow deck is attached to the port and starboard inner hull with a flange, suggesting that the bow area was intended to be enclosed with a bulwark, creating an air pocket for flotation. The starboard gunwale survives, along with an inner gunwale-level wooden stringers set edge-to-edge, a caprail, and a rubrail on the outer hull. The starboard oarlock survives amidships, set between the 2 amidships benches and a metal loop on the starboard quarter is attached to the inner hull. The port side gunwale has deteriorated and the metal is uneven with sharp edges. The port and starboard quarters survive with reinforced corners made of wooden supports with a wide banded metal strap attached to the wood's surface. A thick, heavy, wooden motor board comprised of several pieces of wood is attached to the inner and outer transom, extending above the gunwale; this sturdy outboard motor support suggests Anomaly 74 could easily accommodate the largest motor available in the 1920s-1930s.

The Steel Outboard Motor Boat Wreck has 4 wooden benches: 1 at the bow, 2 amidships, and 1 at the stern. Anomaly 74 was covered in white primer or paint, along with an outer layer of red paint. In considering the wreck's construction, MHM has discerned 2 seams - starboard amidships and the port quarter - created by the joining of metal sheets through welding or brazing. MHM contends Anomaly 74 was constructed by welding since the process required lower temperatures than brazing, and therefore was an easier method to master, particularly if the vessel was a home-build. In consideration of a construction date for the wreck, MHM contends the vessel was fabricated around 1920; small steel boats were commonly used beginning in the 1890s, but the processes of brazing and welding were not commonly used in watercraft construction until after World War I. Anomaly 74's working life would be longer than a wooden boat, at least pertaining to hull integrity due to rot. Therefore, taking the deteriorated condition of the wreck into account, MHM contends Anomaly 74 sank around 1940, a possible 20-year life on the water.

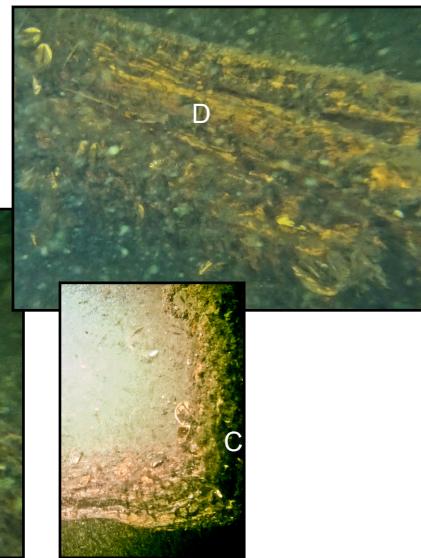
A sonar image of 21-SC-114
(MHM)

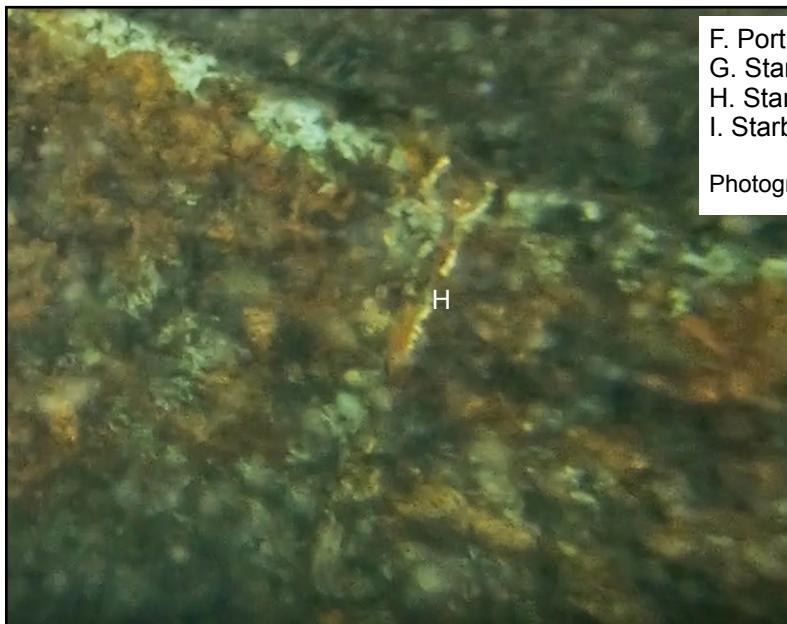
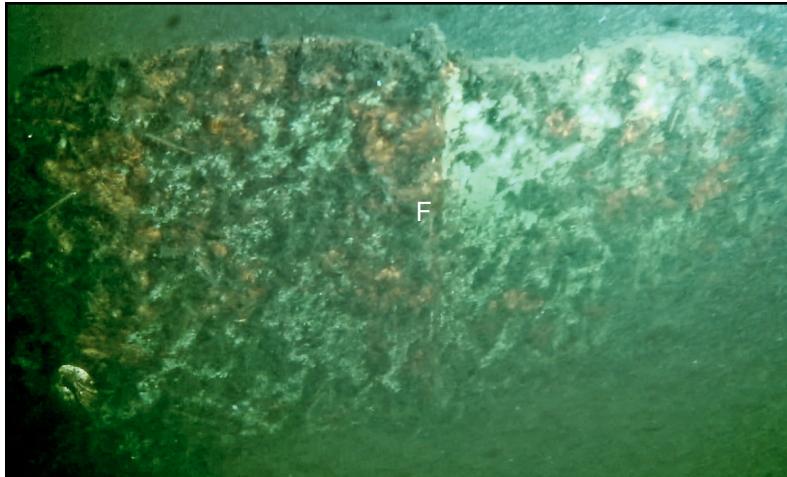




- A. Starboard Bow Slot-Headed Screw
- B. Starboard Oarlock
- C. Starboard Quarter
- D. Outer Transom Motor Board
- E. Inside Port Quarter with Bent Metal Strap

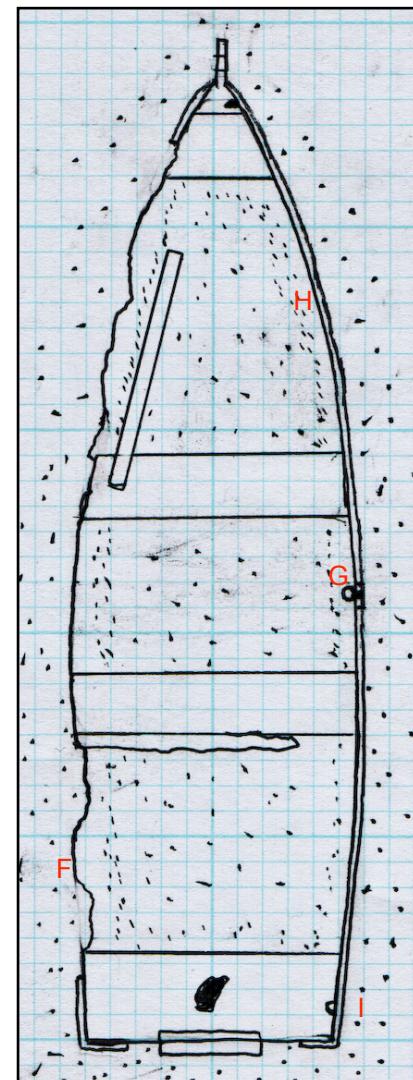
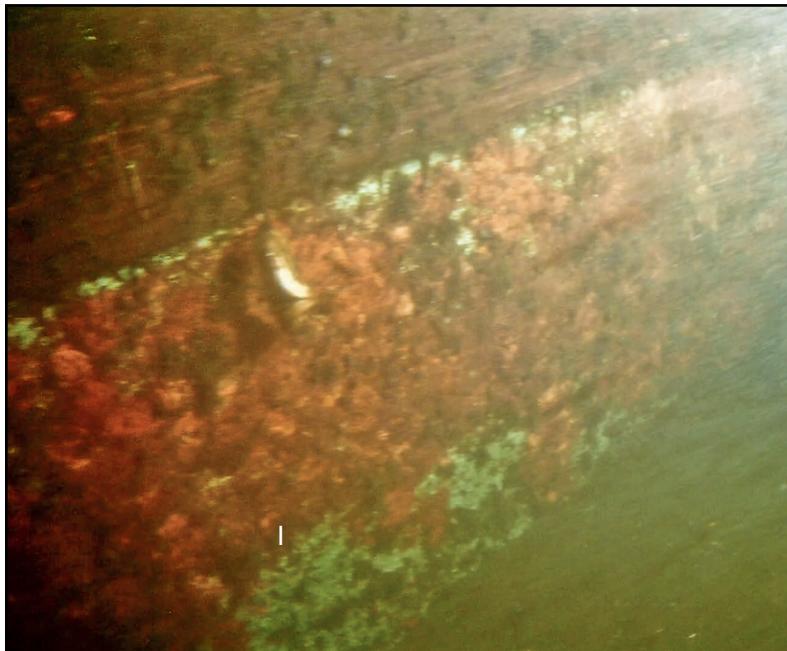
Photographs by Kelly Nehowig and Josh Knutson





F. Port Quarter Welded Seam
G. Starboard Amidships Channel Frame
H. Starboard Forward Welded Seam
I. Starboard Side Quarter Red & White Paint

Photographs by Kelly Nehowig and Josh Knutson



Fish House 1 (Anomaly 30)

MHM recorded sonar images of Anomaly 30 in 2016, 2018, and 2019 and surmised it is a fish house, an identification that was proven during the MSLNA-3 Project. The wood and metal Fish House 1 landed upside-down when it fell through the ice; the square fishing 'hole' in the house's bottom is exposed. It measures approximately 8.00 feet long and 6.00 feet wide, and it stands 4.00 feet off the bottom; MHM suggests there is another 3.00 - 4.00 feet of the house below the silt, making the house 7.00 or 8.00 feet in height. Metal attachments on one end of the house were likely used to move the house on the ice. Anomaly 30 is a protected submerged maritime cultural resource.



Part of the bottom frame of Fish House 1; poor visibility did not allow for good images.

Photograph by Kelly Nehowig



Fish House 2 (Anomaly 8.2)

MHM recorded sonar images of Anomaly 8.2 in 2016 and 2018, initially surmising that it is a dock box that was separated from its original location. However, with the identification of Anomaly 30, and a re-examination of the sonar images, MHM has determined that Anomaly 8.2 is a partially-buried fish house that is lying on its side. Therefore, Fish House 2 does not require SCUBA reconnaissance unless further information about this particular submerged cultural resource is derived from historical research. Another argument that supports MHM's identification of the site without using SCUBA is its location; it is near a spread of a significant stone field and would be an excellent fishing spot. MHM contends Fish House 2 is roughly the same size as Fish House 1, but it is lying at an angle and is significantly more buried. Anomaly 8.2 is a protected submerged maritime cultural resource.



Bucket Anchors (Anomaly 72)

MHM recorded images of Anomaly 72 in 2019; the irregular nature of the anomaly left its nature in question, but the image's definition warranted its investigation. It appeared to be an object with an irregular shape and while it did not cast a significant acoustical shadow, it was



a human-made object or group of objects. Dive reconnaissance on Anomaly 72 allowed MHM to identify it as a group of Bucket Anchors used to secure recreational rafts. Anomaly 72 is a submerged maritime cultural resource - still in use by its owner.

Barrel (Anomaly 25)

Initially MHM surmised that Anomaly 25 was a rock, but additional sonar footage recorded in 2019 indicates it is a barrel. No dive reconnaissance is necessary to acquire additional data.



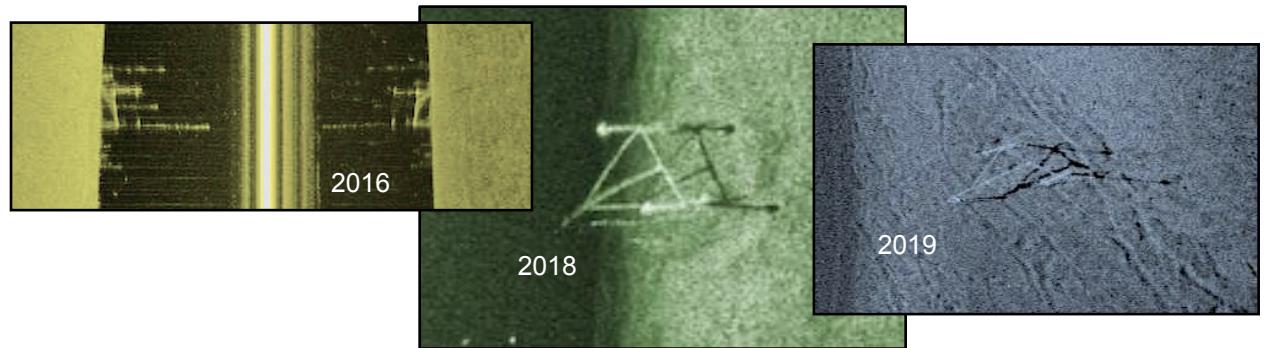
Tire (Anomaly 60)

Initially MHM surmised that Anomaly 60 was a rock, but additional sonar footage recorded in 2019 indicates it is a tire. No dive reconnaissance is necessary because additional data is not required.



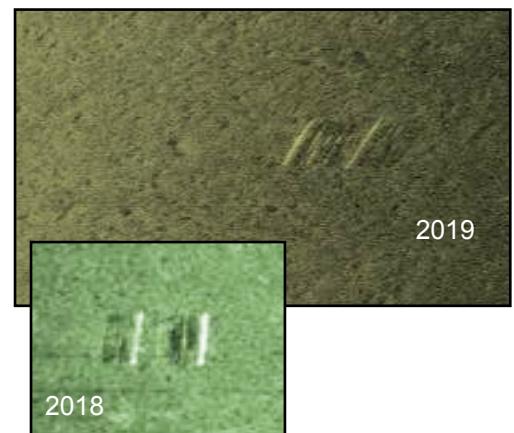
Re-evaluation: Boat Lift or Boat Trailer (Anomaly 41)

MHM initially identified Anomaly 41 as a boat lift - and it may be a boat lift. However, a sonar image recorded in 2019 also suggests it may be a boat trailer. Investigation by SCUBA in the future may be warranted to answer archaeological questions about Anomaly 41.



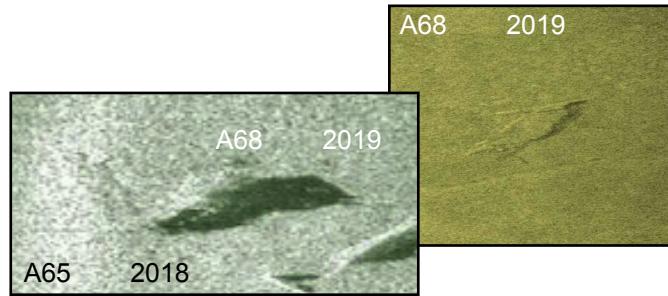
Capsized Pontoon: Wreck or Raft? (Anomaly 1)

MHM has recorded sonar images of Anomaly 1 in 2016, 2018, and 2019. Initially MHM supposed it was a Capsized Pontoon Raft, but it may be a Capsized Pontoon Boat Wreck. MHM hoped to answer that question during the MSLNA-3 Project, but low visibility prevented appropriate data collection.



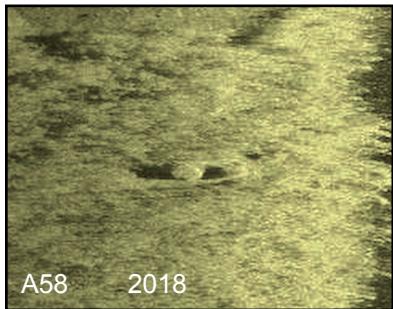
Trees (Anomalies 65, 68)

MHM conducted dive reconnaissance on Anomaly 68 because its sonar signature suggested it was human-made; however, it is a tree. Anomaly 65 is also a tree, likely with some vegetation around it, determined by sonar analysis.



Rocks (Anomalies 11, 34, 35, 38, 58, 70)

Additional sonar scans of Anomalies 11, 34, 35, 38, 58, and 70 indicate they are singular rocks or collections of rocks. No reconnaissance diving on these anomalies is necessary.



Vegetation (Anomalies 40, 45)

Sonar recordings of Anomalies 40 and 45 from 2016 suggested they were human-made; new scans indicate they are vegetation.

False Targets (Anomalies 23, 33, 37, 39)

Anomalies 23, 33, 37, and 39 were possible human-made objects, but new scans allowed MHM to determine they are false targets - most likely lake bottom contours.

Conclusion

MHM identified the first 3 recognized wrecks on the bottom of Prior Lake during the MSLNA-1 Project in 2017: the Wooden Outboard Wreck (21-SC-108), the Fiberglass Hydroplane Wreck (21-SC-109), and the Glasspar G-3 Skiboat Wreck (Anomaly 18). MHM's targeted re-scanning of Prior Lake using improved down and side-imaging sonar during the MSLNA-2 Project produced significantly more detailed data. Within this data, MHM recognized a 4th wreck (Anomaly 57), 4 possible wrecks (Anomalies 58, 59, 63, 64), 1 capsized pontoon boat or raft (Anomaly 1), and 2 possible fish houses (Anomalies 8.2, 30). During the MSLNA-3 Project in Prior Lake, MHM and its volunteers identified 5 new wrecks, 3 new submerged maritime sites, and 2 'other' objects. Also

during this project, MHM's targeted side and down imaging sonar re-scanning of Prior Lake allowed for the identification of 16 anomalies as false targets comprised of bottom contours or vegetation, rocks, and a tree - without dive reconnaissance, and 1 anomaly requires re-evaluation.

Specifically, the 5 newly recognized wrecks - all Minnesota Archaeological Sites - offer significant and interesting data into the maritime history of the Prior Lake area in terms of watercraft design and construction. The Wooden Flat Bottomed Row Boat Wreck (21-SC-116) is unique in Minnesota's archaeological record because of her construction attributes. MHM contends, at least currently, that 21-SC-116 is the oldest wreck on the bottom of the lake, likely sinking before 1910. Twelve Minnesota Archaeological Sites and 2 museum collection watercraft identified by MHM have many shared attributes with 21-SC-116, and she joins a list of significant small craft sites.¹ Several archaeological questions concerning this wreck have been answered, including that she is flat bottomed, she has upright frames at both quarters, and the frames are attached to the transom with large bolts with roves. Rarely are Minnesota small craft identified with bolt and rove construction. Further, the structural components that comprise the wreck's quarters are upright frames that are formed from rough tree branches. The boatwright did not fashion rectangular beams for these quarter supports; instead, strong branches were cut, they were stripped of bark and smaller branches, and used in the vessel's construction in that state. The only Minnesota watercraft MHM has identified with an attribute remotely similar to the rough-hewn frames of 21-SC-116 is *The Constitution/Old Ironsides* - the oldest known wooden planked boat in Minnesota - 3D scanned and documented by MHM in 2019. *The Constitution/Old Ironsides* has floors on her flat bottom that are comprised of stripped and twisted tree branches.² The Wooden Flat Bottomed Row Boat Wreck and *The Constitution/Old Ironsides* are preserved cultural resources - made in Minnesota - that contain construction elements previously unknown in the archaeological and maritime historical records.

The 2 newly identified steel wrecks in Prior Lake - the Steel Outboard Wreck (21-SC-113) and the Steel Outboard Motor Boat Wreck (21-SC-114) - join the 8 other small (under 30.00 feet long) steel wreck sites identified to date in Minnesota.³ These 8 wrecks each provide MHM with a wide range of construction attributes that can provide details of the changes to small steel watercraft from the late 18th into the 19th centuries. The documentation of future sites, along with these known wrecks, will provide historians and scholars with opportunities to further study these protected submerged cultural resources.

¹Small flat bottomed wooden wrecks identified in other Minnesota lakes by MHM to date: Lake Minnetonka (21-HE-415, 21-HE-417, 21-HE-422, 21-HE-457, 21-HE-485, 21-HE-487, 21-HE-488, 21-HE-489, 21-HE-509, 21-HE-531), Medicine Lake (21-HE-518), Lake Johanna (21-RA-85), West Hennepin History Center, and Museum of Lake Minnetonka. See MHM's *Lake Minnetonka Nautical Archaeology 1-9 Project Reports, Minnesota Suburban Lakes Nautical Archaeology 1-3 Project Reports*, and *Minnesota Small Craft 3D Scanning Project 1 and 3 Reports*.

²See MHM's *Minnesota Historic Fishing Boats Analysis and 3D Scanning Project Report*, 3-11.

³Smaller steel (not aluminum or iron) wrecks identified in other Minnesota lakes by MHM to date: Lake Minnetonka (21-HE-510, 21-HE-530), Lake Pulaski (21-WR-206, Anomaly 13), Lake Johanna (21-RA-83), Medicine Lake (21-HE-516), and White Bear Lake (21-WA-114, 21-WA-115). See MHM's *Lake Minnetonka Nautical Archaeology 8 and 9 Project Reports, Minnesota Suburban Lakes Nautical Archaeology 2 Project Report*, and *White Bear Lake Nautical Archaeology 1 Project Report*.

While 21-SC-115 (Wooden Outboard Motor Boat Wreck) and 21-SC-112 (Slat Wood Outboard Motor Boat Wreck) are constructed with different stave sizes, the basic design of each wreck is the same. The fragmentary nature of 21-SC-115 and the low visibility during research dives did not allow for extensive data collection during the MSLNA-3 Project. However, at the time of MHM's investigation of 21-SC-112, the water at the location of the wreck had great clarity, allowing for quality video and data collection. These 2 wooden motor boat wrecks represent the type of basic wooden fishing boat used by thousands of Minnesotans every Spring, Summer, and Autumn on the thousands of lakes around the state. These wrecks join 9 similar wrecks and small watercraft preserved in museums and collections that MHM has documented over the last decade.⁴ Lastly, Fish House 1 joins the only other Fish House site MHM has identified through archaeological reconnaissance, Anomaly 14 in White Bear Lake. MHM contends there are many other examples of fish houses on other lake bottoms in Minnesota. As a whole, the MSLNA-3 Project produced interesting and significant results investigating 21 anomalies in 3 lakes in 3 counties using SCUBA. MHM dove upon and identified 8 wrecks, 4 maritime sites or objects, 2 cars, and 3 'other' objects in Prior Lake, Medicine Lake, and Lake Johanna. Of the 8 wrecks, MHM acquired Minnesota Archaeological Site Numbers for 6 of them: 5 in Prior Lake and 1 in Lake Johanna.

The wrecking processes responsible for the creation of Minnesota's submerged cultural resources have produced a variety of underwater sites. Identifying, comparing, and associating these new sites in Prior Lake, Lake Johanna, and Medicine Lake, along with known sites increases our understanding of the historical context within which these cultural resources operated or were exploited by Minnesotans. Future studies will greatly enhance our shared maritime history through the recognition of submerged cultural resources and the stories behind their construction and disposition. The diversity of nautical, maritime, and underwater sites so far identified by MHM in Minnesota's lakes are tangible examples of the rich maritime history of the area. Through research, diving on wrecks and anomalies to collect pertinent data, and ensuring that the collected information is accessible by the public, MHM will continue to investigate Minnesota's submerged cultural resources into the future. MHM continues to re-examine recorded sonar footage from completed remote sensing surveys. Targeted re-scanning has occurred in several lakes using knowledge gained from the comparison of anomalies that have proven to be wrecks or other submerged cultural resources in past projects. With improved technology, future scanning projects will produce clearer data. The results of the MSLNA-3 Project summarized above is connected to all the work that came before and will come after its completion. At this point, watercraft located Minnesota's suburban lakes represent approximately 1,000 years of Minnesota's maritime history and nautical archaeology. In the historic period, the known wrecks represented in these lakes span around 140 years of local maritime culture. It is clear – even through this Phase 1 pre-disturbance nautical archaeological investigation

⁴Similar wrecks and boats in museums and collections identified by MHM to date: Prior Lake (21-SC-108), Lake Minnetonka (21-HE-500, 21-HE-506, 21-HE-513, Anomaly 467, Anomaly 764), Medicine Lake (21-HE-517), Cokato Museum, and the Warner Collection. See MHM's *Lake Minnetonka Nautical Archaeology 4 and 7-9 Project Reports*, *Minnesota Suburban Lakes Nautical Archaeology 1-2 Project Reports*, and *Minnesota Small Craft 3D Scanning Project 1 and 3 Reports*.

- that the types of sites that exist in Minnesota's suburban lakes documented to date are diverse, archaeologically and historically significant, and worthy of great attention.

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